

clarion Service Manual

Published by Service Engineering Section



NISSAN Automobile Genuine AM/FM Cassette Stereo

Model **PN-9661H**
(Genuine No. 28115 61G00)
(ID No. CK541)

Model **PN-9661C**
(Genuine No. 28115 54F00)
(ID No. CK551)

■ SPECIFICATIONS:

[RADIO SECTION]

Circuit system: Superheterodyne
Tuning system: Electronic tuning
Receive range: AM 530kHz to 1,710kHz
FM 87.75MHz to 107.9MHz
Intermediate frequency:
AM 450kHz
FM 10.7MHz
Quieting sensitivity:
AM Less than 32dB
(at 20dB S/N)
FM Less than 7 ± 6dB
(at 30dB S/N)
Separation: FM More than 20dB
Auto tuning stop sensitivity:
AM 32 ± 6dB
FM 25 ± 3dB


[TAPE SECTION]

Reproduction system:
4 track, 2 channel, stereo
cassette deck
Tape speed: 4.76cm/sec. (1-7/8"/sec.)
Wow & flutter: Less than 0.15% (W.R.M.S.)
Separation: More than 35dB
Crosstalk: More than 40dB
S/N ratio: Normal (120μs)
NR OFF More than 45dB
NR ON More than 55dB
Metal (70μs)
NR OFF More than 47dB
NR ON More than 57dB

FF, REW time: Less than 130sec. (C-60)

[SYNTHESIS]

Load impedance: 300Ω
Power output: 530mV ± 3dB (AM)
380mV ± 3dB (FM)
1.2V ± 3dB (TAPE)
Power supply voltage:
DC 13.2V Negative ground
Current consumption:
Less than 3mA
(at Back up)
Dimensions: Width 180mm
Height 52mm
Depth 160mm
Weight: 1.5kg

• Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
• "DOLBY" and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

■ COMPONENT:

• PN-9661H-A/PN-9661C-A
Main unit

1

■ADJUSTMENTS:

FM

ITEM	PROCEDURE
OV (MAIN)	<ol style="list-style-type: none"> 1. Set the input from SG to 98.1MHz, 55dB (1kHz/no-modulation). 2. Connect the voltmeter to TP1 and TP2. 3. Adjust IFT101 so that the voltage of voltmeter is retained within $0V \pm 20mV$.
GAIN (MAIN)	<ol style="list-style-type: none"> 1. Set the input from SG to 98.1MHz, 15dB (1kHz/22.5kHz). 2. Connect the voltmeter to TP3. 3. Adjust VR103 so that the voltage of voltmeter is retained within $1.6V \pm 0.1V$.
NOISE CONVERGENCE (MAIN)	<ol style="list-style-type: none"> 1. Set the input from SG to 98.1MHz, 55dB (1kHz/22.5kHz). 2. Adjust the main VOL so that the output level is 0dB (0.245V). 3. Set the input from SG to -20dB. 4. Adjust VR106 so that the output level is $-13 \pm 1dB$.
OV (SUB)	<ol style="list-style-type: none"> 1. Set the input from SG to 98.1MHz, 55dB (1kHz/no-modulation). 2. Connect the voltmeter to TP5 and TP6. 3. Adjust IFT102 so that the voltage of voltmeter is retained within $0V \pm 20mV$.
GAIN (SUB)	<ol style="list-style-type: none"> 1. Set the input from SG to 98.1MHz, 15dB (1kHz/22.5kHz). 2. Connect the voltmeter to TP4. 3. Adjust VR104 so that the voltage of voltmeter is retained within $1.6V \pm 0.1V$.
NOISE CONVERGENCE (SUB)	<ol style="list-style-type: none"> 1. Set the input from SG to 98.1MHz, 55dB (1kHz/22.5kHz). 2. Adjust the main VOL so that the output level is 0dB (0.245V). 3. Set the input from SG to -20dB. 4. Adjust VR107 so that the output level is $-13 \pm 1dB$.
SD (MAIN)	<ol style="list-style-type: none"> 1. Set the input from SG to 98.1MHz, 26dB (1kHz). 2. Adjust VR105 so that TP8 is 2~3.5V.
SASC (MAIN)	<ol style="list-style-type: none"> 1. Input the 98.1MHz/65dB, 7kHz modulation frequency, 30% modulation degree SSG signal. 2. Adjust the output level of the volume controller to 0dBm (0.775V). 3. Set the SSG output to 30dB and adjust VR108 so that the output level is -1dB.
SEPARATION (MAIN)	<ol style="list-style-type: none"> 1. Input the 98.1MHz, connect the output of a stereo modulator to the external modulation terminal, and input a 65dB SSG signal. 2. Set the stereo modulator to the L or R ch and adjust VR111 so that the maximum separation is obtained.

AUDIO

ITEM	PROCEDURE
CMRR	<ol style="list-style-type: none"> 1. Make short circuit of pin 4, 6 (L ch) of 8P DIN connector, connect it with + side of oscillator. (Make short circuit of pin 5, 7 for R ch.) 2. When setting the output level 3.0V (0dB), 1kHz to the set from the oscillator, adjust the output waveform of ㉑ and ㉒ of outlet socket (L ch sp out) or pins ㉓ and ㉔ (R ch sp out) to be more than 56dB by the use of VR101 (L ch) or VR102 (R ch).

DOLBY NR

ITEM	PROCEDURE
DOLBY NR	<ol style="list-style-type: none"> 1. Insert a Dolby level test tape (400Hz—200nWb/m), connect the milli-volt meter to TP10 and TP9, and adjust VR110 and VR109 to obtain an output of $300mV \pm 1dB$. (Dolby SW OFF)

Switching of diversity

How to fix the main channel

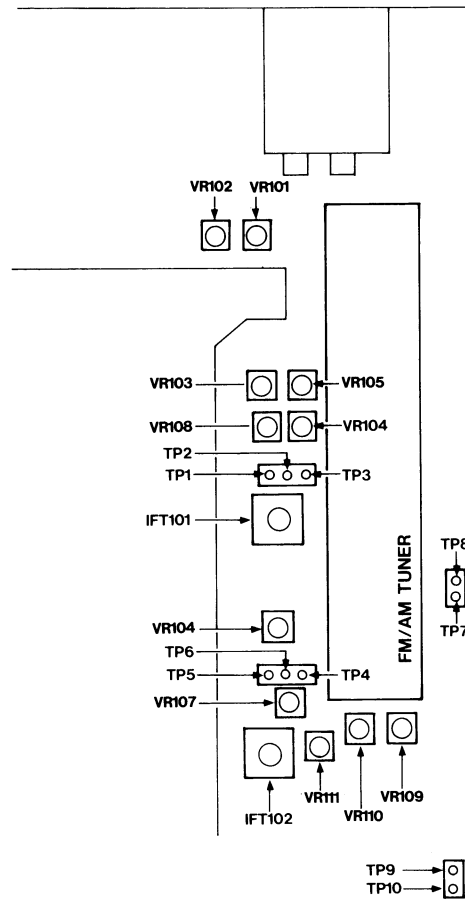
While holding the buttons of CH1 and CH3, turn on the RADIO SW.

How to fix the sub channel

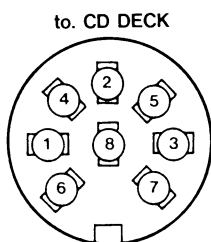
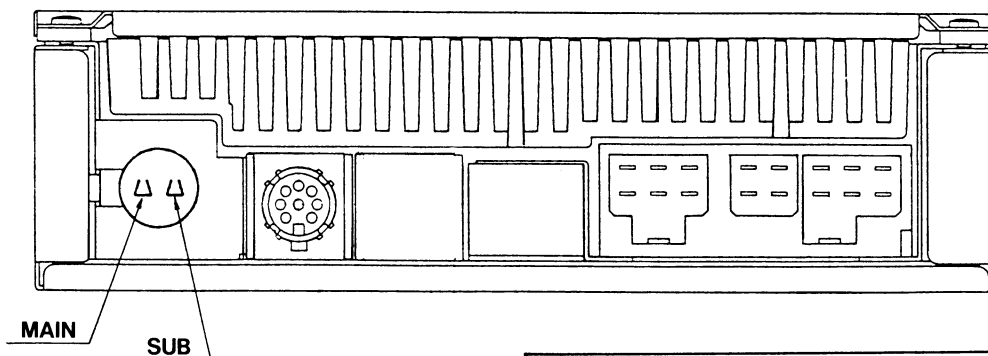
While holding the buttons of CH4 and CH6, turn on the RADIO SW.

To release the main or sub channel, turn off the RADIO SW.

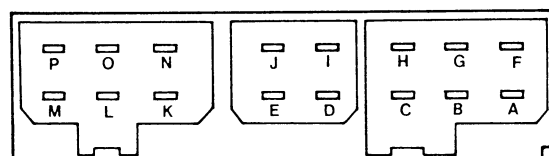
● ADJUSTMENT POINT



■ REAR VIEW and CONNECTORS:

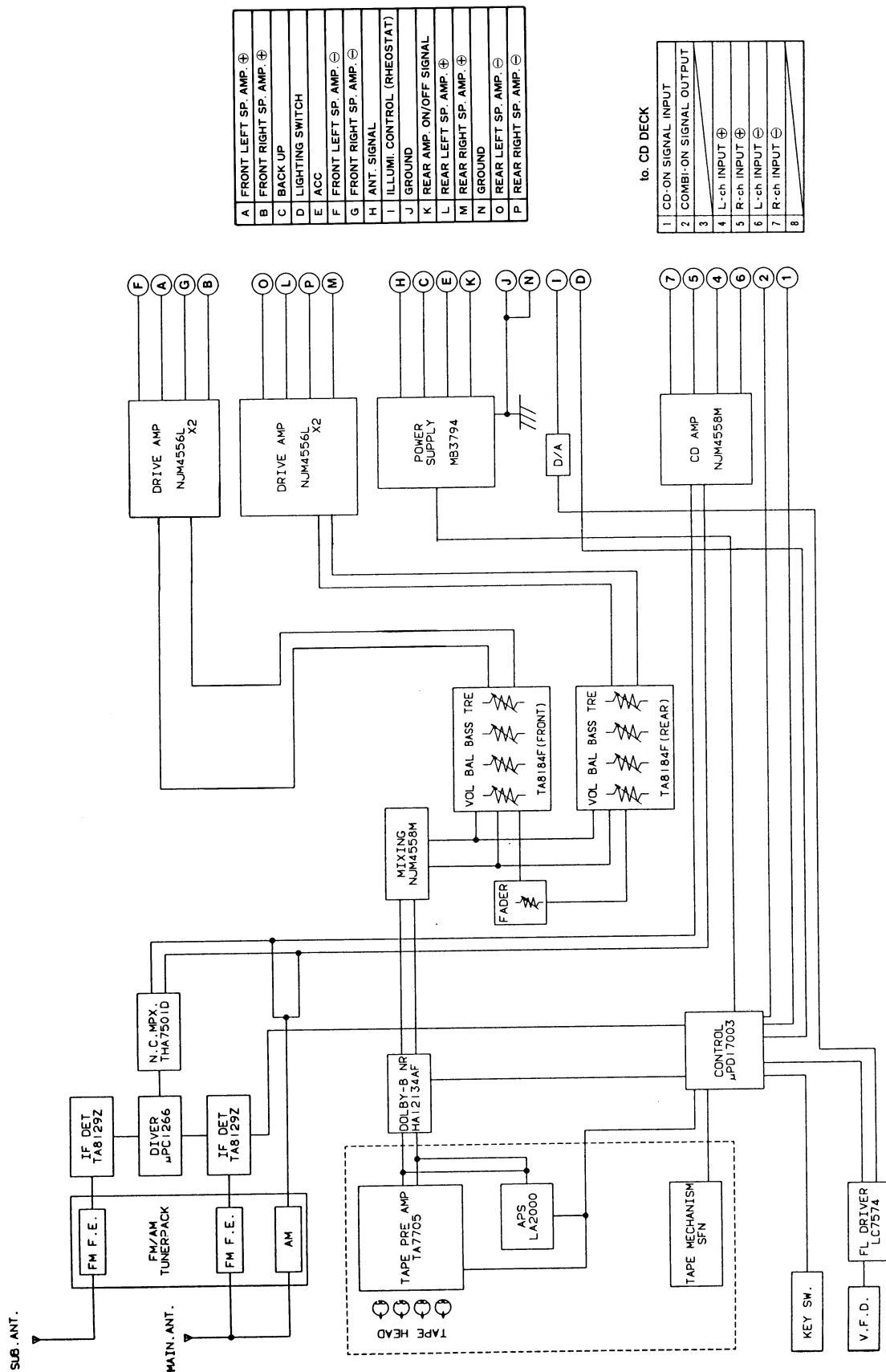


to. CD DECK	
1	CD-ON SIGNAL INPUT
2	COMBI-ON SIGNAL OUTPUT
3	
4	L-ch INPUT ⊕
5	R-ch INPUT ⊕
6	L-ch INPUT ⊖
7	R-ch INPUT ⊖
8	



A	FRONT LEFT SP. AMP. ⊕	I	ILLUMI. CONTROL (RHEOSTAT)
B	FRONT RIGHT SP. AMP. ⊕	J	GROUND
C	BACK UP	K	REAR AMP. ON/OFF SIGNAL
D	LIGHTING SWITCH	L	REAR LEFT SP. AMP. ⊕
E	ACC	M	REAR RIGHT SP. AMP. ⊕
F	FRONT LEFT SP. AMP. ⊖	N	GROUND
G	FRONT RIGHT SP. AMP. ⊖	O	REAR LEFT SP. AMP. ⊖
H	ANT. SIGNAL	P	REAR RIGHT SP. AMP. ⊖

■ BLOCK DIAGRAM:



■ EXPLANATION OF IC's:

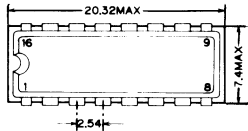
※ IC's other than explained below are described in Service Manual
「EXPLANATION OF IC's」 Vol.2~Vol.4.

HA12134A	051-1349-00	
HA12134AF	051-1349-10	Dolby B Type Noise Reduction
HA12135A	991-0221-30	System
HA12136A	051-1379-00	

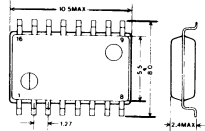
Dolby Level

IC Name	HA12134A HA12134AF	HA12135A	HA12136A	Unit
Dolby level	300	450	580	mVrms

Outward Form

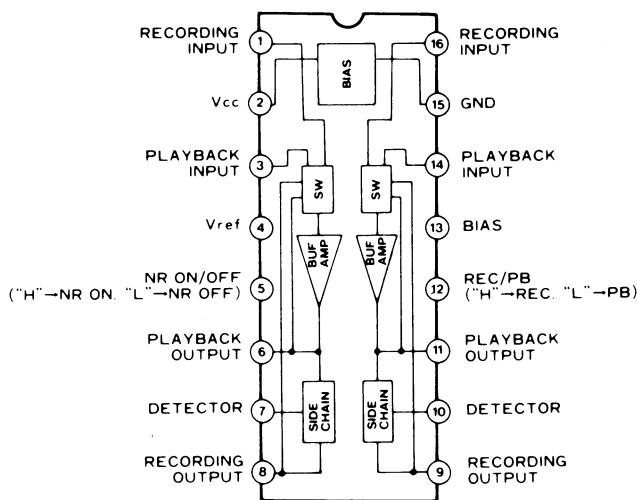


A Type



AF Type

Block Diagram

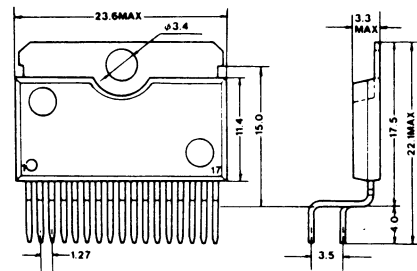


Terminal Description

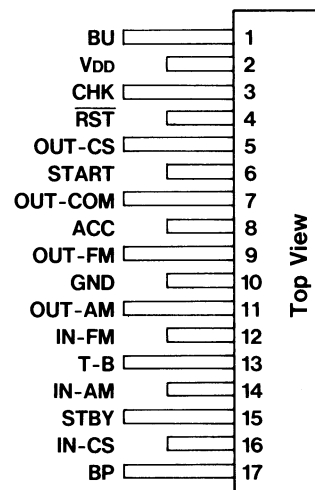
Pin No.	Symbol	I/O	Function
41~5	S1~S37	O	Segment output terminal which displays data transferred from serial data.
2, 3	G1, G2	O	Digit driver output terminal.
44	CL	I	Serial data transfer terminal. Connected to controller (microprocessor). CL : Synchronous clock DI : Transferred data CE : Chip enable
43	DI		
42	CE		
47	BLK	I	Display OFF input terminal. BLK = "0" VSS...OFF, BLK = "1" VDD...ON
48	OSC	I	Oscillation terminal.
1	VDD	-	Power supply terminal.
46	VSS		
45	DIM	I	Terminal with built-in 6-bit ADC which drives IC directly (when not controlled by controller) to control dimmer.
4	VFL	-	VFD power supply terminal.

■ MB3794PSZ-G 051-1554-00 System Power Supply for Car Audio

Outward Form



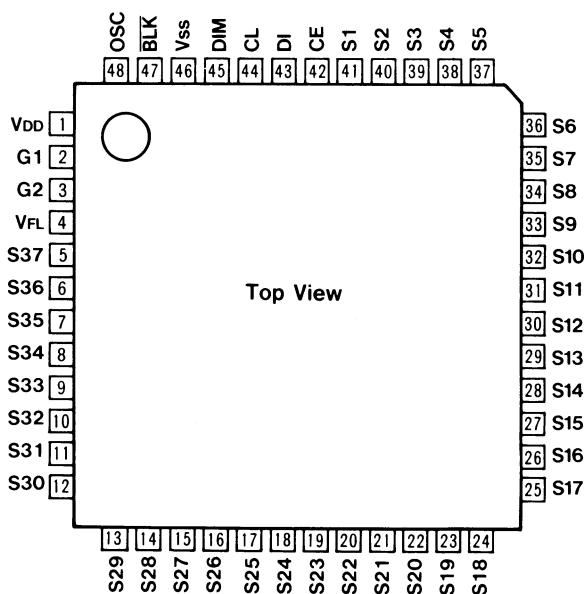
Terminal Connection



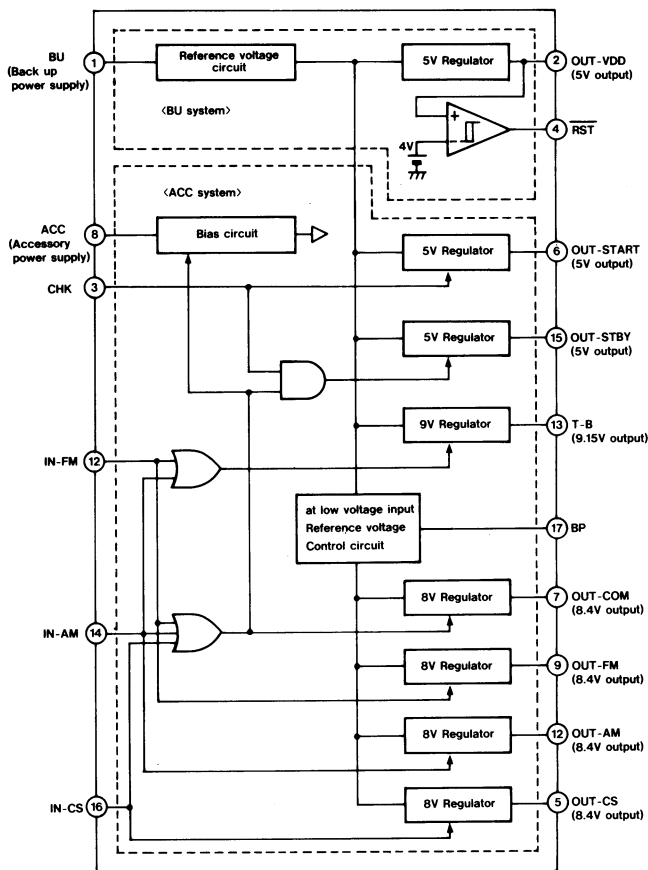
■ LC7574E-8707 051-1637-00 1/2 Duty VFD Driver for LC7574E-8709G 051-1637-10 Frequency Display

※ 051-1637-00 and 051-1637-10 differ only in brightness characteristics.

Terminal Connection



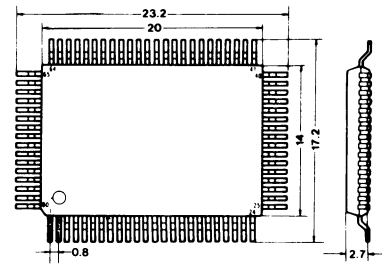
Block Diagram



Terminal Description

Pin No.	Symbol	I/O	Function
1	BU	—	Connect to power supply for car backup.
2	V _{DD}	—	Power supply voltage output for microcomputer supplied from BU.
3	CHK	I	Terminal for checking ACC line connection. Inputs voltage whose ACC voltage is divided by resistance.
4	RST	O	Reset signal output terminal to microcomputer at V _{DD} drop.
5	OUT-CS	O	Power supply voltage output for cassette tape decks such as equalizer amplifier. Output by selecting IN-CS.
6	START	O	Control output for transmitting operation start information of the system to microcomputer by CHK voltage.
7	OUT-COM	O	Power supply voltage output for equipments which are common to the system, such as sound quality control and volume/balance control. Output by selecting one out of IN-FM, IN-AM and IN-CS.
8	ACC	—	Connect to power supply for car accessory.
9	OUT-FM	O	Power supply voltage output for FM receive only. Output by selecting IN-FM.
10	GND	—	Ground terminal.
11	OUT-AM	O	Power supply voltage output for AM receive only. Output by selecting IN-AM.
12	IN-FM	I	Output selection input terminals. Can be controlled at TTL and CMOS levels by microcomputer and so on.
14	IN-AM	I	
16	IN-CS	I	
13	T-B	O	Power supply voltage output for variable capacitors for either 1st RF or electronic synchronism. Output when selecting either IN-FM or IN-AM.
15	STBY	O	Control output in case where circuit or IC with standby function is used.
17	BP	—	Terminal for ripple attenuation ratio improvement at low voltage. Connect to ACC if characteristic improvement is not required.

I. Outward Form



II. Terminal Description

Pin No.	Symbol	I/O	Function
1	RADIO ON/OFF	I	Key input terminal to turn on/off the radio. Switches from ON to OFF or vice versa every time it is set to the Low level.
2	STEREO IN	I	Input terminal to display "ST" when the radio is turned on. Displays "ST" when it is set to the Low level.
3	PULSE VOL	I	Input terminal to select whether REMO VOL UP/REMO VOL DOWN input is connected to the pulse switch or toggle switch. Connected to the pulse switch when at the High level, and to the toggle switch when at the Low level.
4	ILLUMI	I	The Low level is input when lighting is turned on. If the Low level is input when the display is turned on, a light reducing pulse is output to DIMMER (Pin 20) output.
5	DISP CLOCK	O	Display data output terminals to the LCD driver IC.
6	DISP DATA	O	
7	LOAD START	I	Cassette mechanism tape insertion detection input. Changes from the Low level to the High level when the tape is inserted. At this time, the tape is sucked in.
8	APC POSITION	I	Input to detect that the head is located at the APC position. Low level only when the head is located at the APC (intermediate) position (High level at the EJECT, STOP and PLAY modes). The head is advanced to this position at the FF APS/REW APS mode.
9	STOP POSITION	I	Input to detect that the head is located at the STOP position. Low level only when the head is located at the STOP (retract) position (High level at the EJECT, APC and PLAY modes). The head is retracted to this position at the STOP mode.
10	PLAY POSITION	I	Input to detect that the head is located at the PLAY position. Low level only when the head is located at the PLAY (advance) position (High level at the EJECT, STOP and APC modes). The head is advanced to this position at the PLAY mode.
11	FWD REEL	I	Reel rotation detection input. Detects a tape end when the pulse stops. When the tape end is detected, the tape is reversed if at PLAY, FF or FF APS mode, and played if at PLAY, REW or REW APS mode.
12	REV REEL	I	
13	Acc IN (CE)	I	Detection terminal for the vehicle's Acc power. The High level is input when the Acc power is turned on. All functions operate when the Acc power is turned on.
14	METAL IN	I	Metal tape detection input. The Low level is input at the PLAY, FF, REW, FF APS or REW APS mode with the metal tape.
15	EJECT END	I	Cassette mechanism ejection complete detection input. The Low level is input when ejection is completed.
16	PACK SWITCH	I	Pack loading complete detection input. Low level when loading is completed.
17	APC IN	I	Interval detection input from the music search IC. The High level is input when music is playing, and the Low level is input during the interval. At the FF APS or REW APS mode, this input is detected to search for the music.
18	TWEET	O	TWEET (anti-IF beat) terminal control output. The Low level is output when receiving 900kHz AM broadcasting.

Pin No.	Symbol	I/O	Function
19	NC	—	No connection.
20	DIMMER	O	At light reduction time, the Low level is input to the ILLUMI terminal. At this time, a rectangular wave is output from DIMMER output.
21 22	NC	—	No connection.
23	APC LEVEL	O	Music search IC's interval detection sensitivity switching output. Low sensitivity at the High level, and high sensitivity at the Low level. The High level is output only at the FF APS or REW APS mode.
24	METAL OUT (EQ)	O	Equalizer amplifier's equalizer characteristic switching output. The High level is output when selecting the characteristic for the metal.
25	FWD/REV	O	Equalizer amplifier's head input switching output. The forward-side head is selected at the Low level output time, and the reverse-side head is selected at the High level output time.
26	FM IF	I	IF counter input terminal to stop FM automatic channel selection. Automatic channel selection stops when a frequency of 10.7MHz±30kHz is input.
27	AM IF	I	IF counter input terminal to stop AM automatic channel selection. Automatic channel selection stops when a frequency of 450kHz±3kHz is input.
28 29	NC	—	No connection.
30	VDD1	—	Power terminal.
31	AM VCO	I	Terminal to input a PLL local oscillation frequency at AM mode.
32	FM VCO	I	Terminal to input a PLL local oscillation frequency at FM mode.
33	GND	—	Grounding terminal.
34 35	XOUT XIN	O I	Crystal oscillator connecting terminals. Connect 4.5MHz crystal.
36	NC	—	No connection.
37	EO	O	Charge pump output for the PLL frequency synthesizer. Connect to the low-pass filter.
38 40	NC	—	No connection.
41	VDD2	—	Power terminal.
42	MECHA ON	O	Cassette mechanism power control output. The High level is output while the mechanical operation is switching.
43 44	NC	—	No connection.
45	DECK MUTE	O	Control output to mute the sound of the cassette tape. While the mechanical operation is switching, the High level is output at the FF APS, REW APS or STOP mode.
46	DOLBY ON	O	Dolby system ON/OFF control output. Turned on/off by DOLBY in the key matrix. The High level is output when the Dolby system is turned on during play.
47	PRE ON	O	Output to control the amplifier power of the cassette mechanism plus 8V, and Dolby IC power. The High level is output at the FF APS, REW APS or PLAY mode.
48	DECK ON	O	Output to display the cassette-side function of the double function key. The High level is output when the radio is turned off.
49	AM ON	O	Power control output of the AM tuner of the radio. The High level is output when the radio is turned on and AM broadcasting is selected.
50	FM ON	O	Power control output of the FM tuner of the radio. The High level is output when the radio is turned on and FM broadcasting is selected.
51	AMP ON	O	Power control output of the power amplifier. High level when either power amplifier or pre-amplifier is turned on.
52	AF MUTE	O	Control output to turn off audio output. The High level is output when audio output is turned off.

Pin No.	Symbol	I/O	Function
53 54 55	P1 P2 P3	O O O	Cassette mechanism power motor control output.
56 57 58	Q3 Q2 Q1	O O O	Cassette mechanism main motor control output.
59	RF MUTE	O	Output to control tuner sensitivity at automatic selection time. The High level is output during SEEK UP/SEEK DOWN.
60 64	VOL4 VOL0	O	Volume data output.
65 66	NC	—	No connection.
67	DISP STROBE	O	Display data output terminal to the LCD driver IC.
68 74	KS6 KS0	O	Key scan output.
75 78	K3 K0	I	Key data input.
79 80	MAIN VOL UP MAIN VOL DOWN	I I	Volume up and down input terminals of the main body. Detects the MAIN VOL UP and MAIN VOL DOWN phases and controls the volume.

III. Key Matrix Table

Out \ In	K3 (Pin 75)	K2 (Pin 76)	K1 (Pin 77)	K0 (Pin 78)
KS5 (Pin 69)	SCAN UP			
KS4 (Pin 70)	SCAN DOWN	FM/AM	EJECT	PLAY/STOP
KS3 (Pin 71)	TUNE UP	M1 REW	M2 PRO	M3 FF
KS2 (Pin 72)	TUNE DOWN	M4 REW APS	M5 DOLBY	M6 FF APS
KS1 (Pin 73)		CD IN	TEL IN	SC 1 IN



Momentary SW



Transistor SW

Note : At this set mounted on micro-computer, all these keys are not necessarily attached.

■ PARTS LIST:

◎Electrical section

ESCUTCHEON PWB

REF NO.	PART NO.	DESCRIPTION	QTY
D307	001-0516-00	DIODE MA111	1
D338-341	001-0524-00	DIODE HN2D01F	4
	001-0525-00	IMN10	
L301, 302	010-2199-16	COIL	2
C301	042-0418-00	ELECTRO-C 16V 330 μ F	1
IC304	051-1637-10	IC LC7574E-8709G	1
Q303, 305	102-2712-00	TRANSISTOR 2SC2712	2
Q301, 302, 304, 307	103-1781-00	TRANSISTOR 2SD1781	4

REF NO.	PART NO.	DESCRIPTION	QTY
Q306, 308	125-2004-03	TRANSISTOR RN1403	2
	125-2005-02	UN2212	
C302	176-4701-00	CHIP-C 47PF	1
C305, 307	178-2232-05	CHIP-C 0.022 μ F	2
C304	183-1073-12	ELECTRO-C 6.3V 100 μ F	1
C303	183-4753-51	ELECTRO-C 35V 4.7 μ F	1
C306, 308	183-4763-32	ELECTRO-C 16V 47 μ F	2

MAIN PWB

REF NO.	PART NO.	DESCRIPTION	QTY
D212, 214	001-0188-01	DIODE 1S1885A	2
D208	001-0377-42	DIODE MA4075H	1
D202, 325, 326, 329	001-0356-00	DIODE 1SS184	4
D103, 104	001-0366-00	DIODE LTZ-MR15	2
D102, 204, 206, 207, 209, 210, 213, 215, 317, 321, 328, 330, 331, 332, 333	001-0466-00	DIODE S5688B	15
D203	001-0516-00	DIODE MA111	1
D335, 336, 337	001-0525-00	DIODE HN2D01F	3
D327	001-0528-12	DIODE MA8027-L	1
D334	001-0528-49	DIODE MA8100-L	1
IFT103, 104	005-0765-00	IF-TRANS	2
IFT101, 102	005-1002-00	IF-TRANS	2
L201, 202	009-0470-04	CHOKE	2
L104	010-2003-03	COIL	1
L103	010-2199-04	COIL 0.22 μ H	1
L102, 105, 106, 303	010-2199-16	COIL 2.2 μ H	4
L101	010-2199-37	COIL 120 μ H	1
VR103, 104	012-4962-50	VARIABLE-R *330	2
VR101, 102, 105-107	012-4962-56	VARIABLE-R *10K	5
VR109, 110	012-4962-57	VARIABLE-R *22K	2
VR108, 111	012-4962-58	VARIABLE-R *33K	2
C319	042-0334-20	ELECTRO-C 25V 33 μ F	1
C231, 240	042-0374-00	ELECTRO-C 16V 330 μ F	2
C188, 191, 192	042-0397-00	CHIP-C 16V 1 μ F TAN	3
C187	042-0397-01	CHIP-C 35V 0.22 μ F TAN	1
C146-149	042-0397-02	CHIP-C 35V 0.33 μ F TAN	4
C120, 150-153	042-0403-01	CHIP-C 16V 10 μ F TAN	5
C134-137	042-0405-00	ELECTRO-C 16V 10 μ F	4
C209, 210, 212, 213, 222, 223, 225, 226	042-0405-04	ELECTRO-C 10V 100 μ F	8
C128, 129, 220, 221	042-0405-05	ELECTRO-C 35V 4.7 μ F	4
C201, 202, 215, 216, 258-261	042-0405-06	ELECTRO-C 50V 0.47 μ F	8
C206, 207, 222, 223	042-0405-09	ELECTRO-C 50V 2.2 μ F	4
C127, 211, 224	042-0417-00	ELECTRO-C 10V 220 μ F	3
C214, 227	042-0418-00	ELECTRO-C 16V 330 μ F	2
C111, 113, 116, 117	042-0471-01	ELECTRO-C 10V 10 μ F	4
C313	042-0478-01	ELECTRO-C 16V 120 μ F	1
IC104	051-0350-54	IC NJM2904M	1
IC101-103	051-0350-55	IC NJM4558M	3
IC110	051-0541-00	IC μ PC1266	1
IC110	051-0541-00	IC μ PC1266	1
IC107, 108	051-1154-10	IC TA8129Z	2
IC109	051-1224-00	IC THA7501D	1

REF NO.	PART NO.	DESCRIPTION	QTY
IC303	051-1272-00	IC μ PC2410HF	1
IC111	051-1349-10	IC HA12134AF	1
IC105, 106	051-1402-00	IC TA8184F	2
IC201-204	051-1407-00	IC NJM4556L	4
IC205	051-1554-00	IC MB3794	1
IC302	051-1662-02	IC μ PD17003AGF-626-3B9	1
X101	060-0115-02	CERA-RESONATOR	1
SUP101, 102	060-0122-10	SURGE PROTECTOR	2
X301	061-1064-00	CRYSTAL	1
Q314, 316	100-1213-00	TRANSISTOR 2SA1213	2
Q224	101-1398-00	TRANSISTOR 2SB1398	1
Q101, 102, 205, 212, 217, 318	102-2712-00	TRANSISTOR 2SC2712	6
Q312, 313	102-2873-00	TRANSISTOR 2SC2873	2
Q203, 204, 207, 208	103-1328-00	TRANSISTOR 2SD1328	4
Q103	108-0217-00	FET 2SK217	1
Q319	108-0536-00	FET 2SK536	1
Q110, 114, 115, 117	125-0002-02	TRANSISTOR RN2402	4
Q210, 213	125-0002-03	TRANSISTOR RN2403	2
Q226	125-0002-04	TRANSISTOR RN2404	1
Q107, 218, 221	125-0013-07	TRANSISTOR RN2427	3
Q350	125-0022-00	TRANSISTOR FMA6	1
Q108, 111, 116, 215, 225, 315, 317	125-2004-02	TRANSISTOR RN1402	7
Q104, 112, 113, 209, 211, 214, 216, 222	125-2004-03	TRANSISTOR RN1403	8
Q119, 120	125-2028-00	TRANSISTOR DTC343TK	2
Q118, 202	125-9002-02	TRANSISTOR RN4602	2
R328	114-1001-11	FILM-R 1W 10 Ω	1
R251	114-2291-11	FILM-R 1W 2.2 Ω	1
R336	114-3301-11	FILM-R 1W 33 Ω	1
C193, 195	163-1053-60	CHIP-C 50V 1 μ F	2
C202, 208	163-1063-30	CHIP-C 16V 10 μ F	2
C228, 230, 234, 237, 254-257	172-2231-11	POLYESTOR-C 0.022 μ F	8
C218, 219	172-2241-11	POLYESTOR-C 0.22 μ F	2
C101	173-3331-10	POLYESTOR-C 0.033 μ F	1
C140-143	173-8221-11	POLYESTOR-C 8200PF	4
C182, 184, 185	176-1007-00	CHIP-C 10PF	3
C122, 123, 124, 324, 325	176-2201-00	CHIP-C 22PF	5
C203-206, 217-220	176-8201-00	CHIP-C 82PF	8
C311, 314, 315	177-1042-05	CHIP-C 0.1 μ F	3
C162, 163, 170, 171, 186, 189, 190, 203, 321	178-1022-05	CHIP-C 1000PF	9
C158, 159, 183	178-1032-05	CHIP-C 0.01 μ F	3
C1-3, 172, 173	178-1042-05	CHIP-C 0.1 μ F	5
C198, 199	178-1532-05	CHIP-C 0.015 μ F	2

REF NO.	PART NO.	DESCRIPTION	QTY	REF NO.	PART NO.	DESCRIPTION	QTY
C106, 110, 114, 119, 174, 175, 214, 229, 232, 236, 238, 241, 243, 244, 246, 247, 249, 317, 318, 326	178-2232-05	CHIP-C 0.022 μ F	20	C112, 130, 131	182-1073-22	ELECTRO-C 10V 100 μ F	3
C178, 179	178-2245-06	CHIP-C 0.22 μ F	2	C204, 208, 209, 221, 316	182-1073-32	ELECTRO-C 16V 100 μ F	5
C196	178-2722-05	CHIP-C 2700PF	1	C167, 168, 180, 181, 197, 201	182-2253-62	ELECTRO-C 50V 2.2 μ F	6
C105	178-3332-05	CHIP-C 0.033 μ F	1	C290	182-2256-52	ELECTRO-C 35V 2.2 μ F NP	1
C132, 133, 138, 139, 144, 145	178-4732-05	CHIP-C 0.047 μ F	6	C102, 155, 156, 194, 207, 225, 312	182-3363-22	ELECTRO-C 10V 33 μ F	7
C205	178-6822-05	CHIP-C 6800PF	1	C118, 121, 161, 180	182-4743-62	ELECTRO-C 50V 0.47 μ F	4
C125, 126	182-1046-62	ELECTRO-C 50V 0.1 μ F NP	2	C216, 217, 224	182-4753-52	ELECTRO-C 35V 4.7 μ F	3
C168, 212, 213, 215	182-1053-62	ELECTRO-C 50V 1 μ F	4	C250, 310	184-1073-32	ELECTRO-C 16V 100 μ F	2
C322	182-1056-62	ELECTRO-C 50V 1 μ F NP	1	C320	184-1083-12	ELECTRO-C 6.3V 1000 μ F	1
C176, 177, 200, 210, 233, 235, 239, 242, 245, 248, 251, 253, 323	182-1063-32	ELECTRO-C 16V 10 μ F	13	C309	184-1083-32	ELECTRO-C 16V 1000 μ F	1
				C252	184-2283-32	ELECTRO-C 16V 2200 μ F	1

PRE-AMP PWB

REF NO.	PART NO.	DESCRIPTION	QTY	REF NO.	PART NO.	DESCRIPTION	QTY
IC2	051-0620-00	IC LA2000	1	C1-4	173-5611-10	POLYESTOR-C 560PF	4
IC1	051-0714-01	IC TA7705F	1	C14	183-1053-62	ELECTRO-C 50V 1 μ F	1
Q1	125-2003-02	TRANSISTOR RN1202	1	C7	183-1063-32	ELECTRO-C 16V 10 μ F	1
	102-3402-00	2SC3402		C5, 8	183-4763-12	ELECTRO-C 6.3V 47 μ F	2
C6, 9	173-1231-10	POLYESTOR-C 0.012 μ F	2	C13	183-4743-62	ELECTRO-C 50V 0.47 μ F	1
C15	172-3331-11	POLYESTOR-C 0.033 μ F	1	C10, 11	183-4753-52	ELECTRO-C 35V 4.7 μ F	2
C12	173-4721-10	POLYESTOR-C 4700PF	1	C16	183-4763-32	ELECTRO-C 16V 47 μ F	1

BOTTOM SUB PWB

REF NO.	PART NO.	DESCRIPTION	QTY	REF NO.	PART NO.	DESCRIPTION	QTY
SW1, 2	013-3863-00	SWITCH	2	SW4	013-3937-00	SWITCH	1
SW3	013-3863-01	SWITCH	1	IC3, 4	051-1114-00	IC NJL5161K	2

● How to read resistor

Resistors are deleted from the table of electric components, (except special resistors). They can be converted to product Nos. as follows.

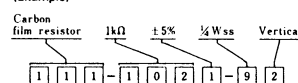
Film resistor (Carbon film resistor/Metal film resistor)

Classification	Resistance *	Tolerance of the value of resistance	Rated power	Shape
1 1 1 (Carbon film resistor)	0	$\pm 2\%$	0	0
	Example	$\pm 5\%$	1 $\frac{1}{4}$ W	1 Horizontal
	33 Ω = 330		2 $\frac{1}{4}$ Ws	2 Vertical
	33k Ω = 333		3	3
	4		4 $\frac{1}{2}$ W	4
			7 $\frac{1}{4}$ W	
			8 $\frac{1}{2}$ Ws	
1 1 4 (Metal film resistor)			9 $\frac{1}{4}$ Wss	
	0		1 1 W	0
	1	$\pm 5\%$	2 2 W	1 Horizontal
	2		3 3 W	2

Chip resistor

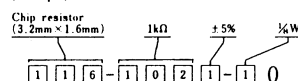
Classification	Resistance *	Tolerance of the value of resistance	Rated power
1 1 6	0	for 0 Ω resistor	0 for 0 Ω resistor
	Example	$\pm 5\%$	1 $\frac{1}{4}$ W
	33 Ω = 330		1.6 mm 3.2mm
1 1 7	33k Ω = 333	$\pm 10\%$	2
	0	for 0 Ω resistor	0 for 0 Ω resistor
	1	$\pm 5\%$	1 $\frac{1}{4}$ W 1.25 mm 2.0mm
1 1 8		$\pm 10\%$	2
	0		0
	1	$\pm 5\%$	1 $\frac{1}{2}$ W 3.2 mm 4.5mm
1 1 9		$\pm 10\%$	2
	0	for 0 Ω resistor	0 for 0 Ω resistor
	1	$\pm 5\%$	1 $\frac{1}{4}$ W 0.8 mm 1.6mm
	2	$\pm 10\%$	2

(Example)

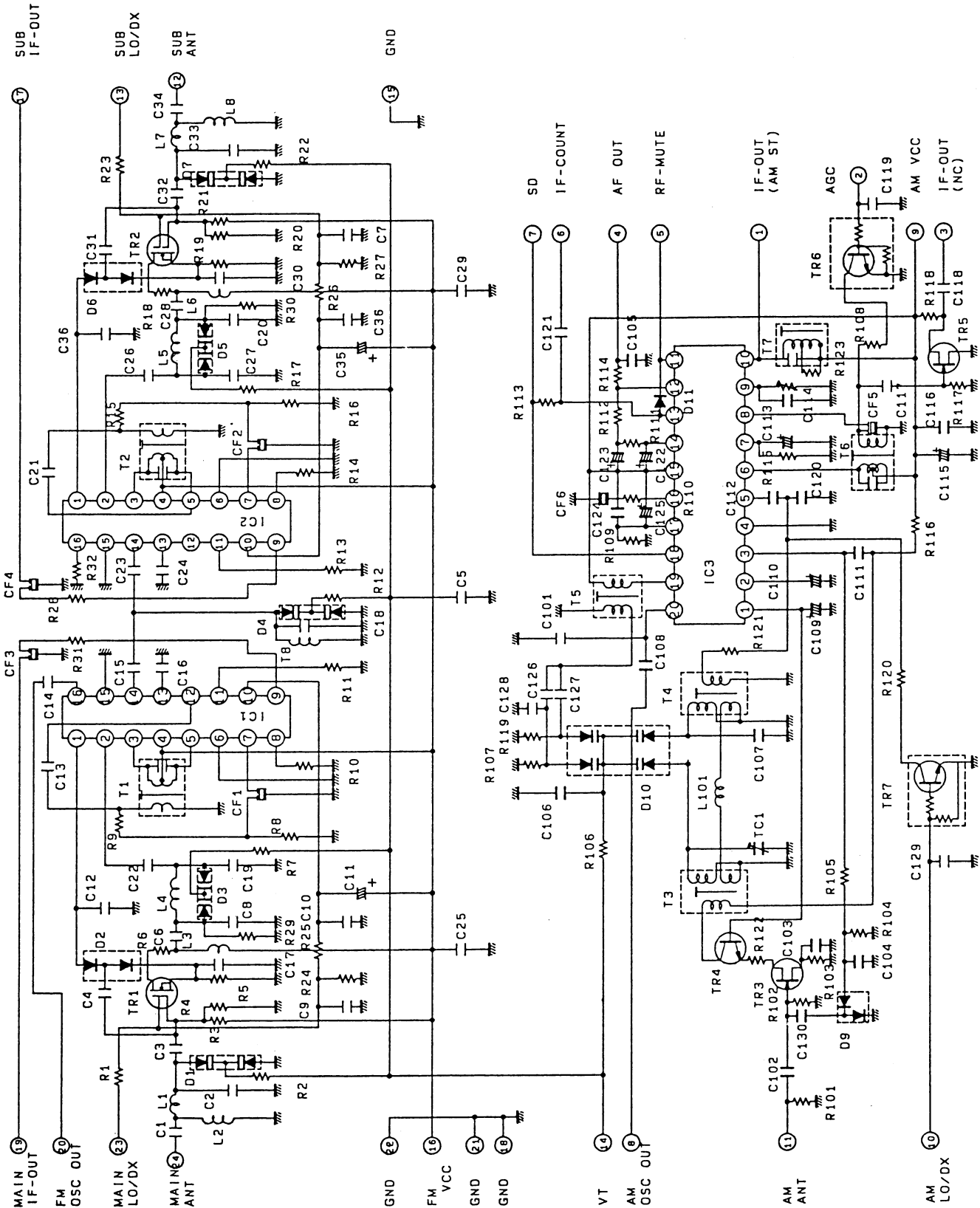


Note 1. The first two of three digits representing resistance are effective digits and the last one represents number of "0" following this.
Unit is given in ohm (Ω).

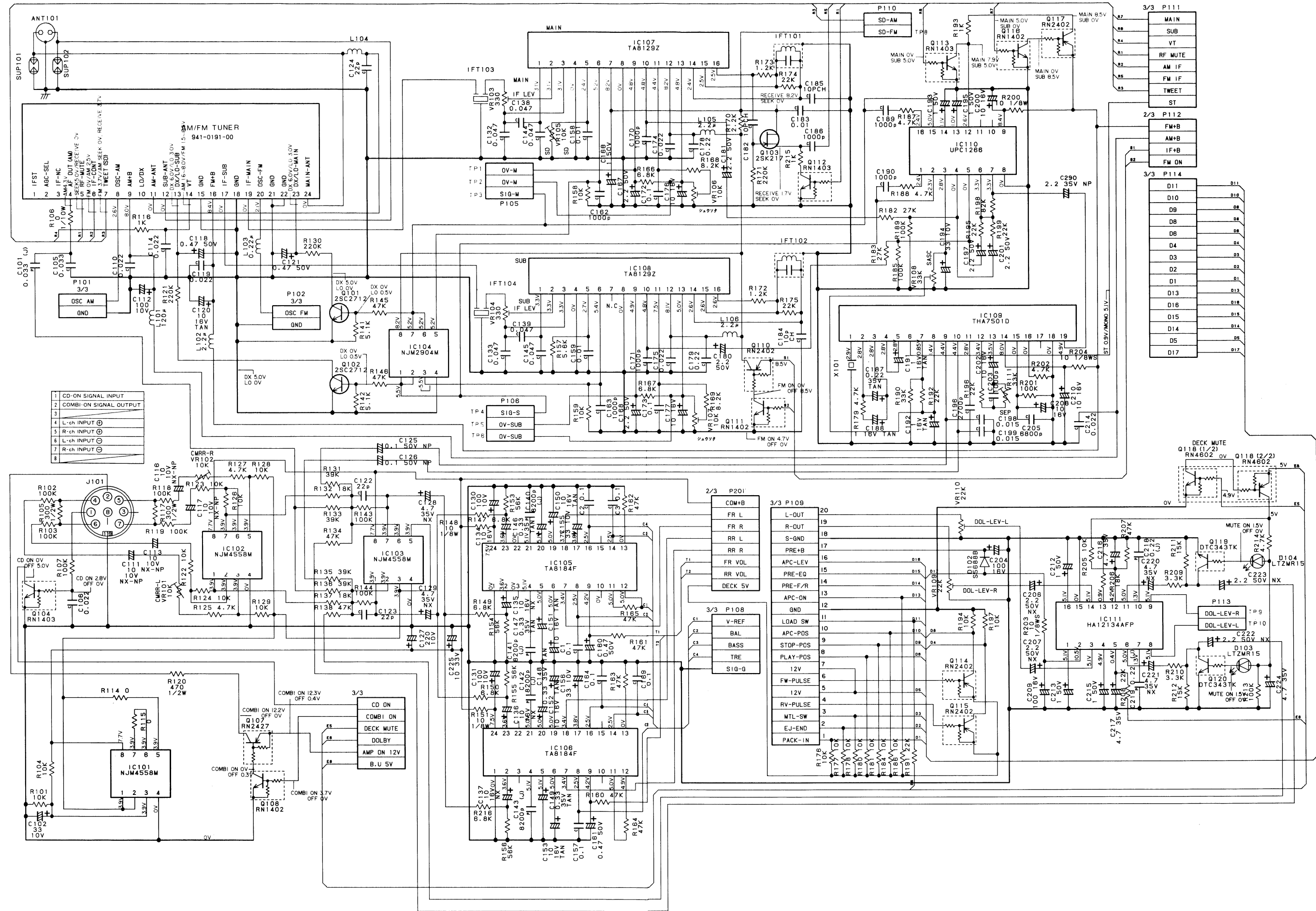
(Example)



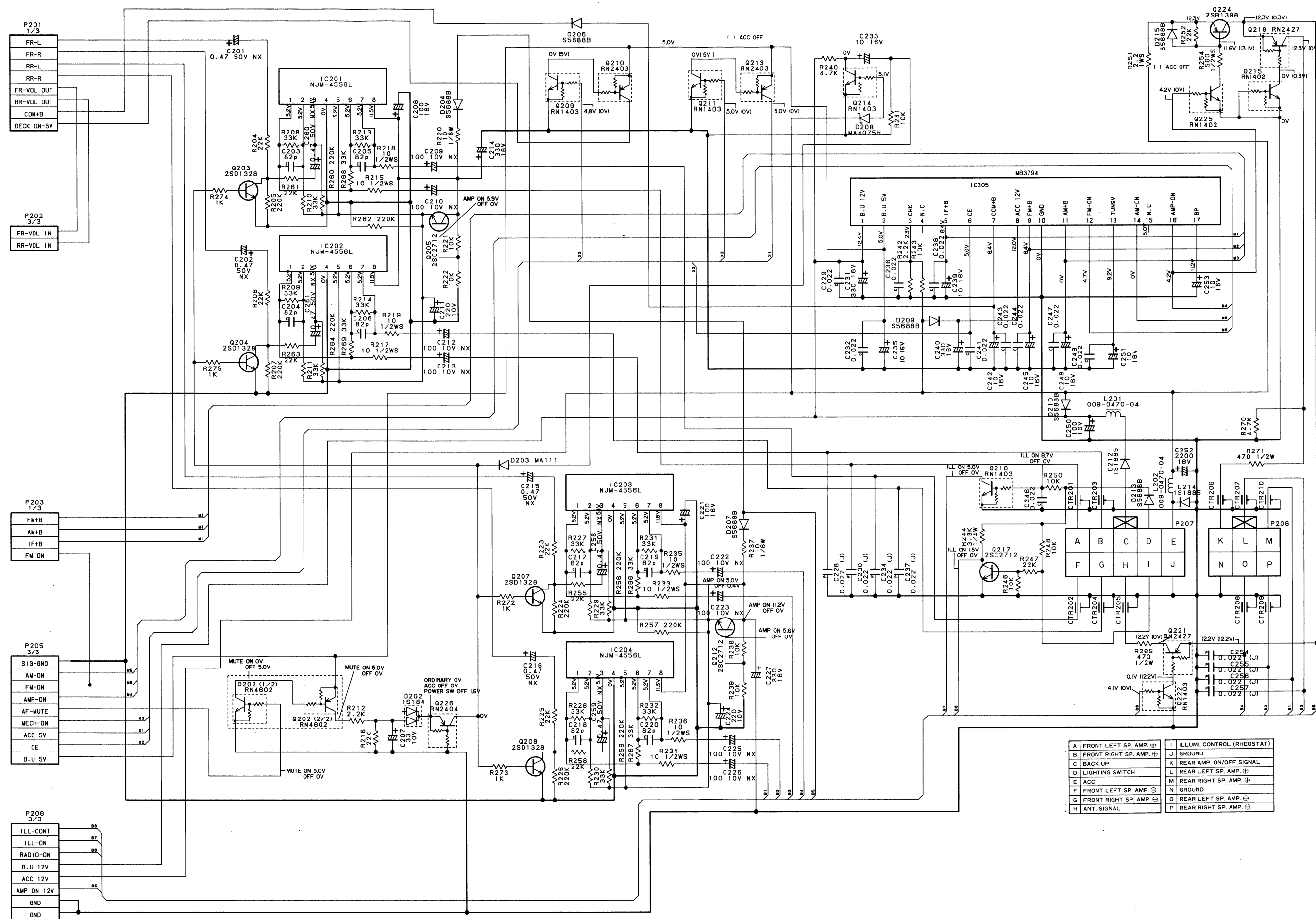
AM/FM TUNER: 941-0191-00



■CIRCUIT DIAGRAM: 1/3

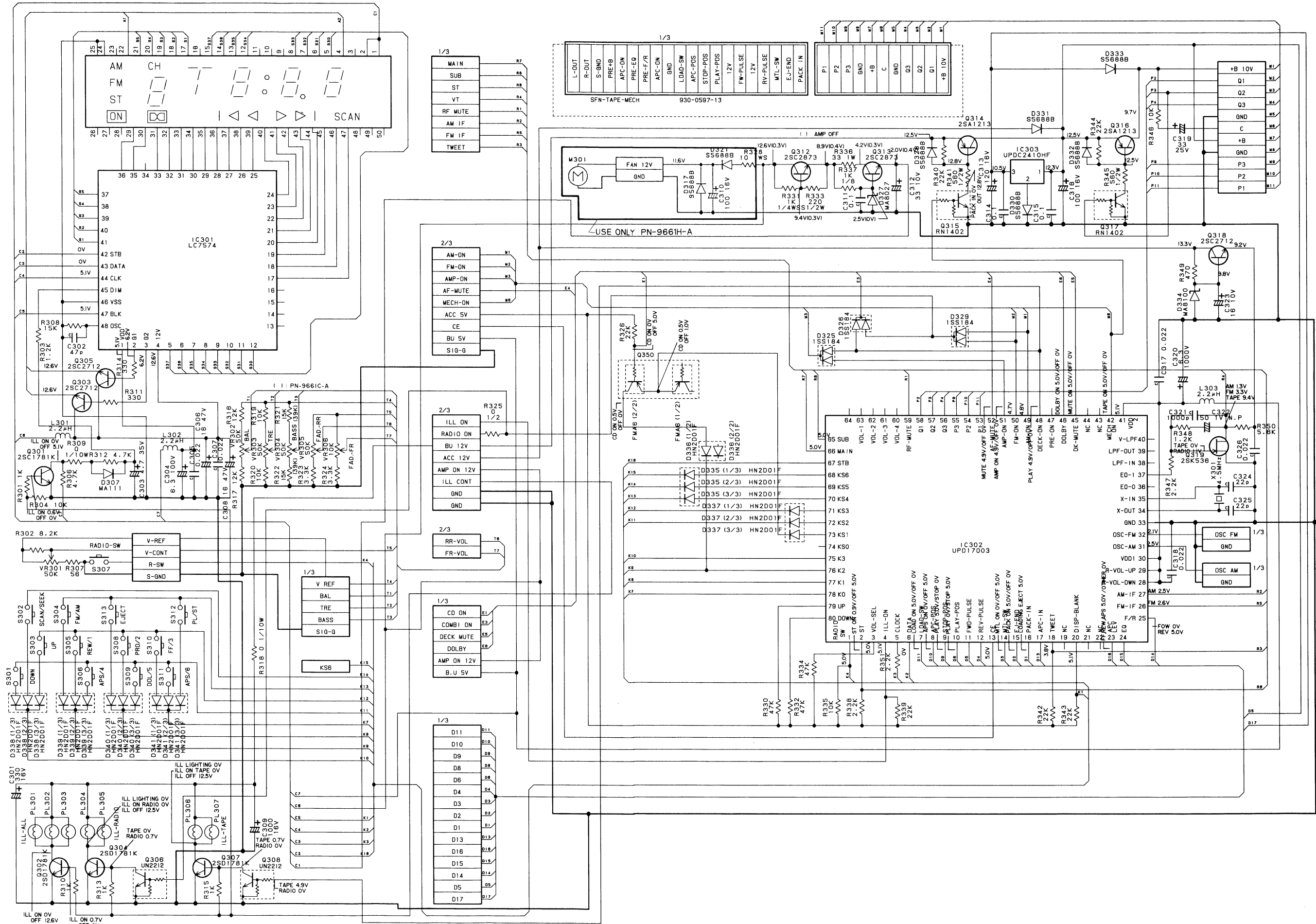


■CIRCUIT DIAGRAM: 2/3

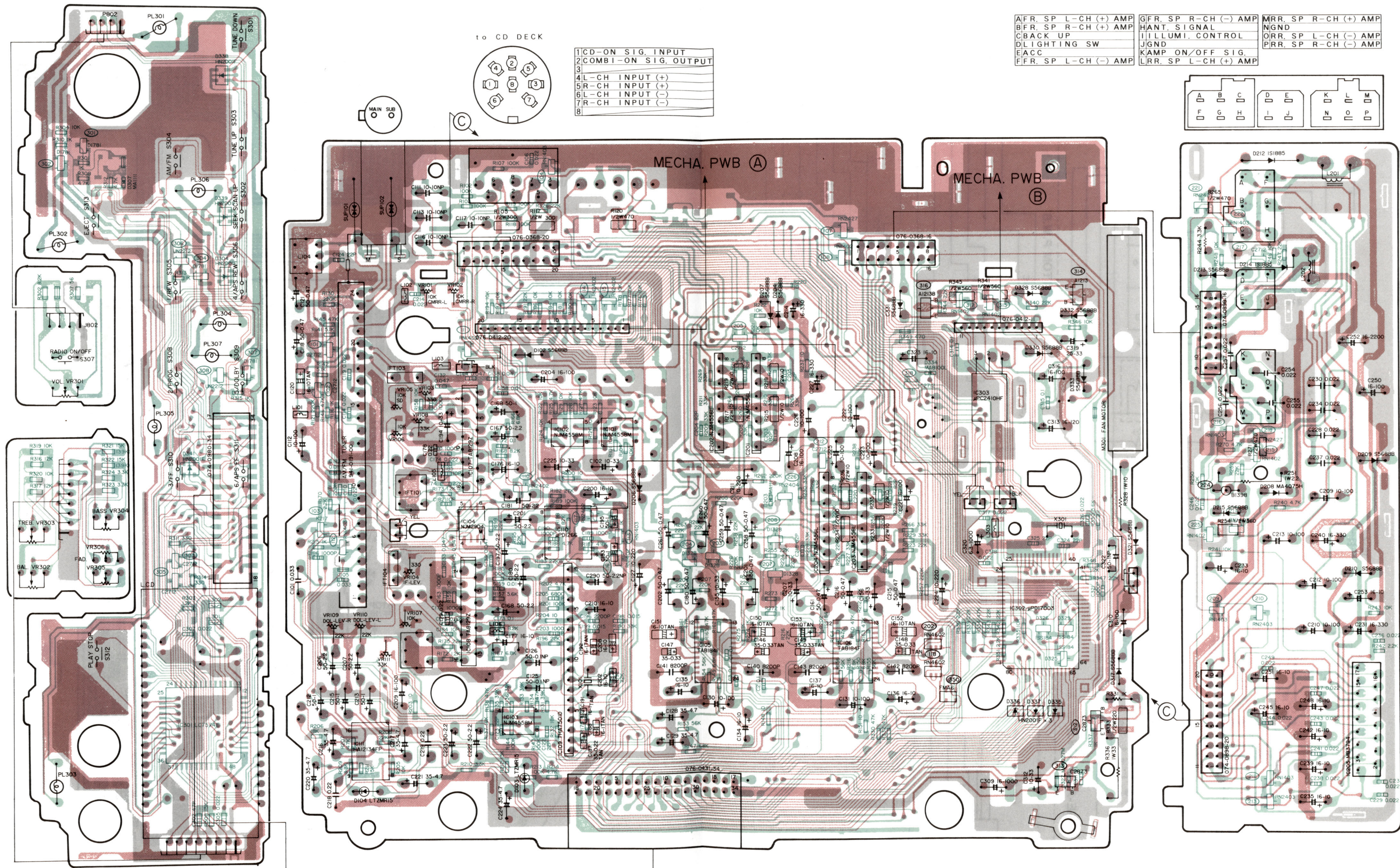


A FRONT LEFT SP. AMP. (+)	I ILLUMI. CONTROL (RHEOSTAT)
B FRONT RIGHT SP. AMP. (+)	J GROUND
C BACK UP	K REAR AMP. ON/OFF SIGNAL
D LIGHTING SWITCH	L REAR LEFT SP. AMP. (+)
E ACC	M REAR RIGHT SP. AMP. (+)
F FRONT LEFT SP. AMP. (-)	N GROUND
G FRONT RIGHT SP. AMP. (-)	O REAR LEFT SP. AMP. (-)
H ANT. SIGNAL	P REAR RIGHT SP. AMP. (-)

CIRCUIT DIAGRAM: 3/3

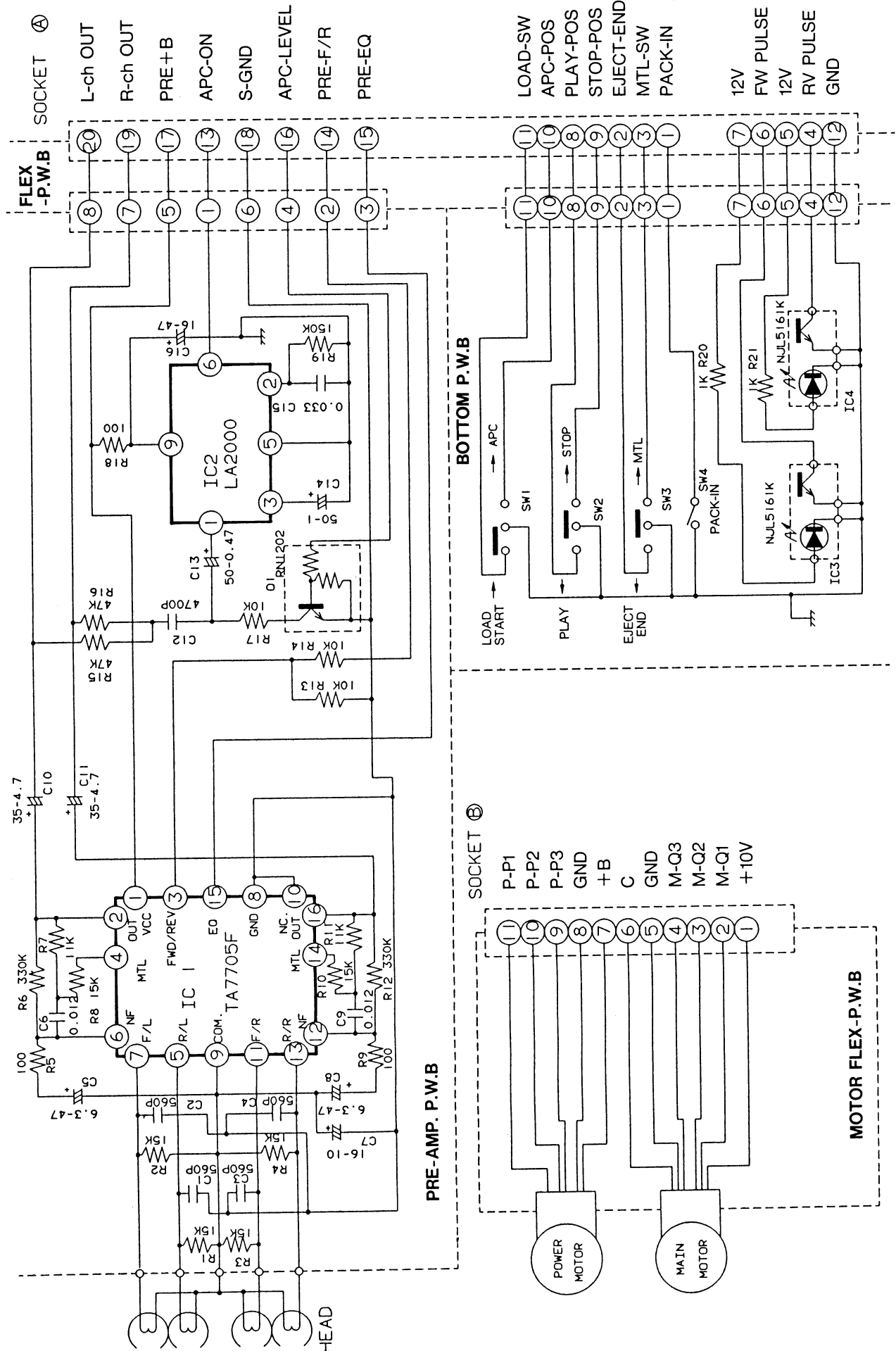


■PRINTED WIRING BOARD:



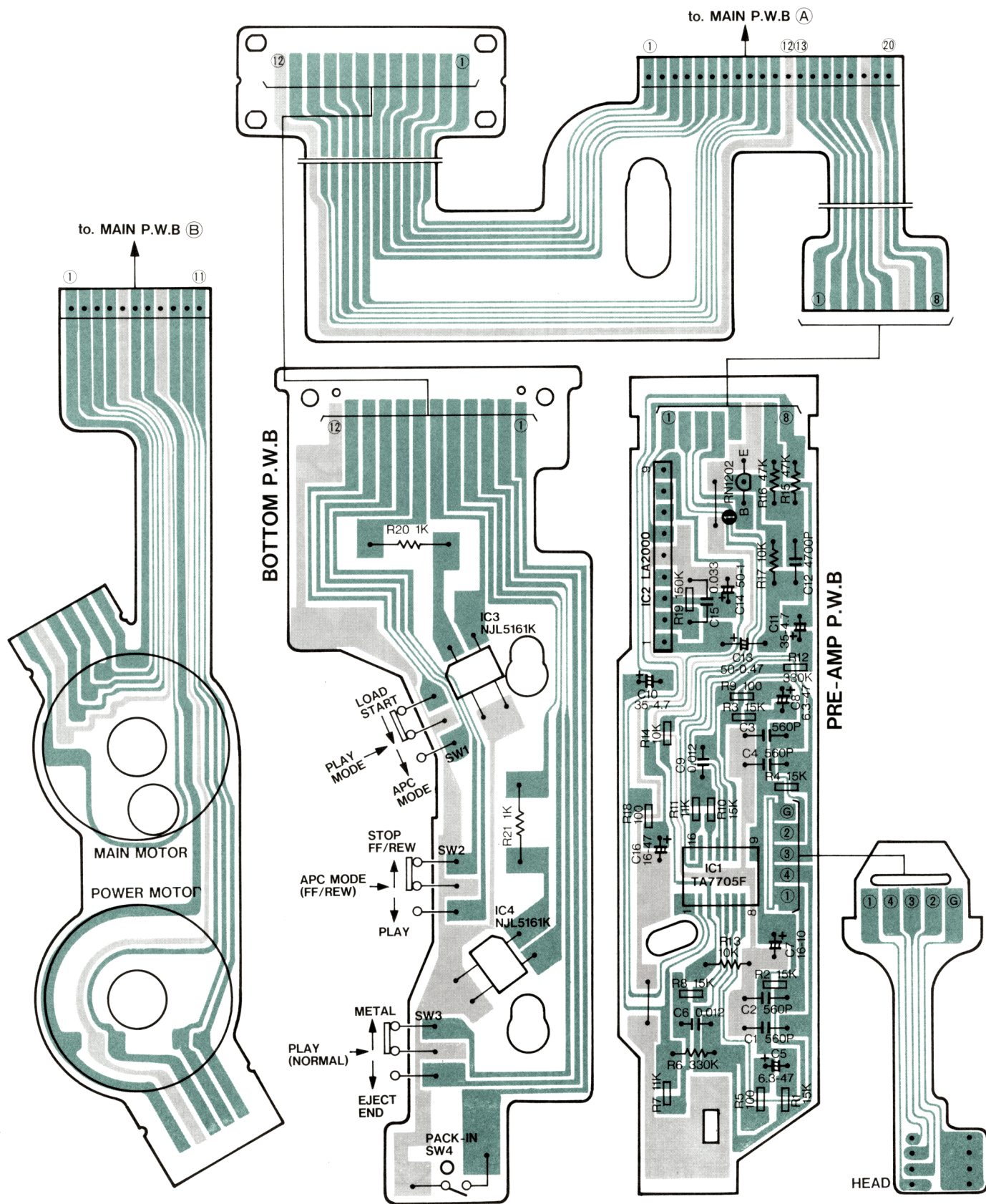
CIRCUIT DIAGRAM:

©Tape mechanism section 930-0597-13



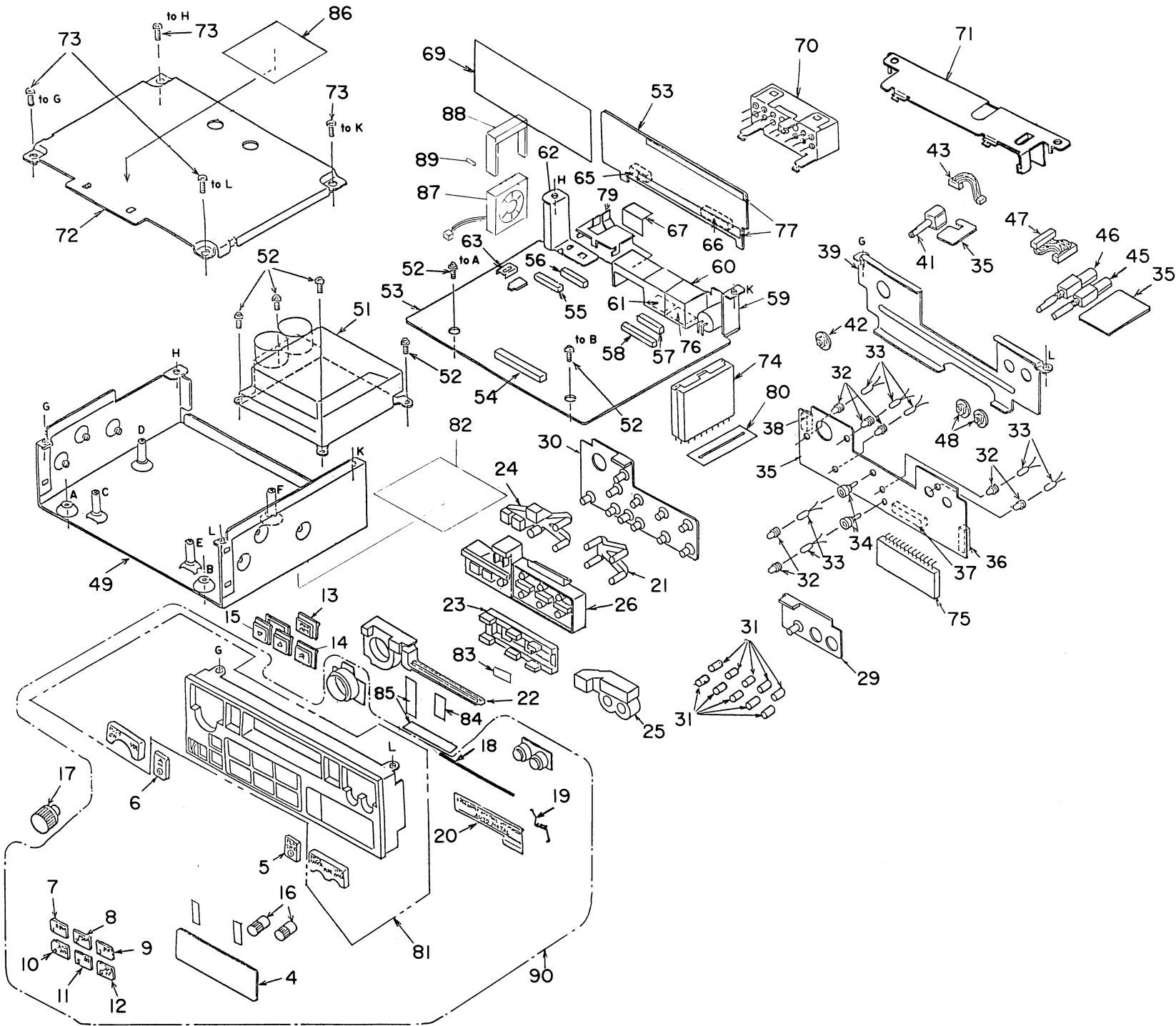
■PRINTED WIRING BOARD:

©Tape mechanism section 930-0597-13



EXPLODED VIEW • PARTS LIST:

◎Main section



NO.	PART NO.	DESCRIPTION	QTY
4	373-0653-00	DIAL CVR *PN-9661H-A	1
	373-0653-10	*PN-9661C-A	
5	382-2759-00	BUTTON PLAY/STOP	1
6	382-2730-00	BUTTON EJECT	1
7	382-2720-00	BUTTON 1	1
8	382-2721-00	BUTTON 2	1
9	382-2722-00	BUTTON 3	1
10	382-2723-00	BUTTON 4	1
11	382-2724-00	BUTTON 5	1
12	382-2725-00	BUTTON 6	1
13	382-2760-00	BUTTON FM/AM	1

PN-9661H-C

NO.	PART NO.	DESCRIPTION	QTY
14	382-2761-00	BUTTON SCAN	1
15	382-2762-00	BUTTON TUNE	1
16	380-5229-00	KNOB *BASS/TRE	2
17	380-5230-00	KNOB *SW-VOL	1
18	341-1380-00	DOOR SHAFT	1
19	750-2626-00	SPRING	1
20	320-0491-04	DUSTPROOF-CVR *PN-9661H-A	1
	320-0491-00	*PN-9661C-A	
21	335-3782-00	REFLECTOR*RADIO	1
22	335-4231-01	REFLECTOR*PACK	1
23	335-4233-01	REFLECTOR*TAPE	1

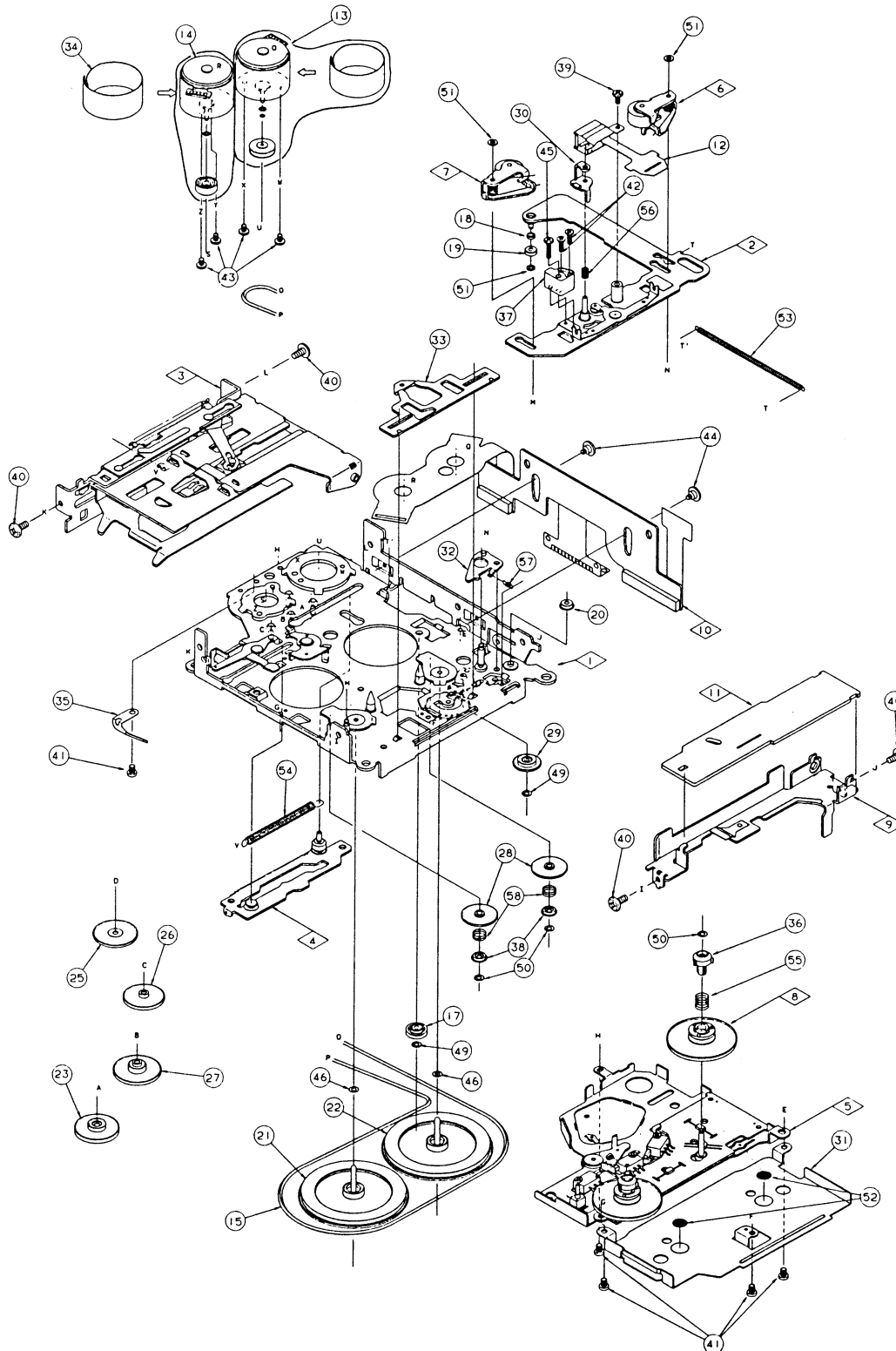
PN-9661H-C

NO.	PART NO.	DESCRIPTION	QTY
24	335-4234-01	REFLECTOR*RADIO	1
25	335-4232-01	REFLECTOR*BASS/TRE	1
26	335-3783-01	REFLECTOR*HOLDER	1
29	345-7267-00	RUBBER SWITCH-R	1
30	345-7266-00	RUBBER SWITCH-L	1
31	335-3807-00	PISTON	10
32	345-3814-65	LAMP CAP	7
33	017-0410-00	PILOT LAMP	7
34	345-7265-00	LAMP HOLDER	2
35	099-9653-01	ESCUTCHEON PWB	1
36	076-0312-08	PLUG *8P	1
37	074-0980-34	OUTLET SOCKET *34P	1
38	076-0312-04	PLUG *4P	1
39	330-9903-01	FRONT PLATE	1
41	012-5134-00	VARIABLE-R *SW-VOL	1
42	722-0368-00	NUT *M7	1
43	854-1214-00	EXTENSION LEAD	1
45	012-4861-01	VARIABLE-R *TREB/BAL	1
46	012-5104-00	VARIABLE-R *BASS/FADER	1
47	854-2788-00	EXTENSION LEAD	1
48	722-0433-00	NUT *M6	2
49	311-1507-02	LOWER CASE	1
51	930-0597-13	TAPE-MECHANISM	1
52	716-0878-00	IT-SCREW *M2.6X5	6
53	099-9797-00	MAIN PWB	1
54	076-0431-34	PLUG *34P	1
55	076-0412-11	PLUG *11P	1
56	076-0368-16	PLUG *16P	1
57	076-0368-20	PLUG *20P	1
58	076-0412-20	PLUG *20P	1
59	330-9691-00	PWB HOLDER(R)	1
60	074-0957-08	OUTLET SOCKET *8P	1
61	347-3219-00	INSULATOR	1
62	330-9692-00	PWB HOLDER(L)	1
63	330-9575-00	IC HOLDER	1
65	074-0898-16	OUTLET SOCKET *16P	1
66	074-0898-20	OUTLET SOCKET *20P	1
67	347-3559-00	INSULATOR	1
69	347-3668-00	INSULATOR	1
70	074-0938-02	OUTLET SOCKET	1
71	330-9948-00	REAR-CVR	1
72	310-1473-00	UPPER CASE	1
73	714-2610-81	MACHINE SCREW *M2.6X10	4
74	941-0191-00	AM/FM TUNER PACK	1
75	379-0389-00	INDICATOR *VFD	1
76	347-3689-00	DOUBLE FACE	1
77	347-2415-00	CUSHION TAPE	2
79	330-9917-00	EARTH PLATE	1
80	347-3612-00	INSULATOR	1
81	940-3229-01	ESCUTCHEON-ASSY*PN-9661H-A	1
	940-3229-11	*PN-9661C-A	
82	286-7756-13	SETPLATE *PN-9661H-A	1
	286-7756-07	*PN-9661C-A	
83	347-1906-00	SHADE	1
84	347-2949-01	PAPER	1
85	347-3683-00	INSULATOR	2
86	347-3053-00	SHADE *ONLY PN-9661H-A	1
87	020-3010-01	DC-MOTOR*ONLY PN-9661H-A	1
88	330-9411-01	FAN-HOLDER*ONLY PN-9661H-A	1
89	820-4006-02	VINYL TUBE*ONLY PN-9661H-A	1
90	940-1477A	ESCUTCHEON ASSY*PN-9661H-A	1
	940-1490A	*PN-9661C-A	

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EXPLODED VIEW • PARTS LIST:

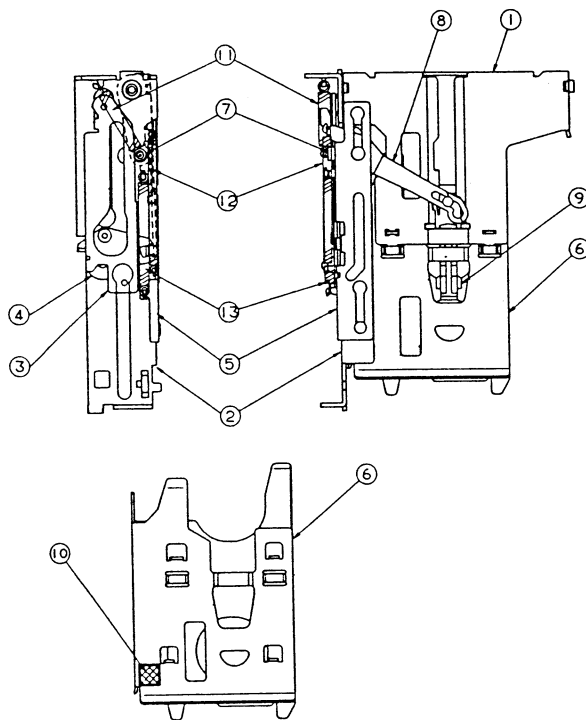
©Tape mechanism section 930-0597-13 (SF-X TYPE0)



NO.	PART NO.	DESCRIPTION	QTY	NO.	PART NO.	DESCRIPTION	QTY
1	960-4322-11	DECK PLATE ASSY	1	10-1	074-0917-11	OUTLET SOCKET	1
2	960-4005-09	HEAD PLATE ASSY	1	10-2	074-0917-20	OUTLET SOCKET	1
3	960-4320-04	EJECT SUB ASSY	1	10-3	960-4326-01	FLEX-PWB ASSY	1
4	960-4011-08	MODE PLATE ASSY	1	11	099-9637-00	PRE-PWB	1
5	960-4321-04	BOTTOM SUB ASSY	1	12	011-0316-11	HEAD	1
6	960-4050-05	ROLLER-S ASSY F	1	13	SMA-123-100	MAIN MOTOR ASSY	1
7	960-4051-05	ROLLER-S ASSY R	1	14	SMA-122-103	POWER MOTOR ASSY	1
8	960-4016-05	REEL BASE ASSY	1	15	602-0111-00	BELT	1
9	960-4117-01	PWB FRAME ASSY	1	17	604-0036-05	TENSION PULLEY	1
10	990-0693-01	PWB ASSY	1	18	610-0316-01	HEAD-P-ROLLER-M	1

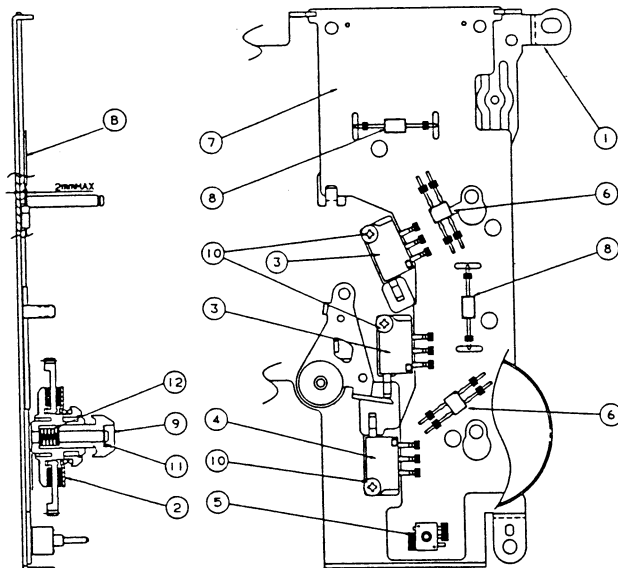
NO.	PART NO.	DESCRIPTION	QTY	NO.	PART NO.	DESCRIPTION	QTY
19	610-0313-02	DRIVING ROLLER	1	38	631-0637-00	IDLER ROLLER	2
20	610-0347-00	HEAD-P-G-ROLLER	1	39	714-2003-81	MACHINE SCREW	1
21	611-0084-03	FLYWHEEL R	1	41	716-0717-10	STEEL SCREW	5
22	611-0085-02	FLYWHEEL F	1	42	716-0833-02	AZIMUTH SCREW	2
23	613-0122-01	SHAFT-P-GEAR	1	43	716-0835-00	SCREW *MOTOR	4
25	613-0246-00	GEAR A	1	44	716-1523-00	PWB-G-SCREW	2
26	613-0247-00	GEAR B	1	45	739-2090-17	PRECISION SCREW *AZ BASE	1
27	613-0248-00	GEAR C	1	46	746-0624-00	WASHER *FLYWHEEL	2
28	613-0249-99	PLAY IDLER GEAR	2	49	746-0724-00	WASHER	2
29	613-0250-00	CHANGE GEAR	1	50	746-0761-00	WASHER	3
30	630-2342-04	ADJUST LINK	1	51	746-0768-00	WASHER	3
31	630-2345-04	FLYWHEEL PLATE	1	52	746-0767-00	WASHER	2
32	630-2374-01	CHOHOLD PLATE	1	53	750-2715-02	HEAD-P-SPRING	1
33	630-2343-06	CHANGE PLATE	1	54	750-3018-00	MODE-P-SPRING	1
34	630-2409-00	SHIELD CASE	1	55	750-2720-00	SLID SPRING	1
35	630-2408-01	MOTOR SPRING	1	56	750-2721-02	AZIMUTH SPRING	1
36	631-0601-02	SLIDE BUSH	1	57	750-2725-00	CH-HOLD-SPRING	1
37	631-0650-00	ADJUST BASE	1	58	750-2793-01	IDLER SPRING	2

◎EJECT SUB ASS'Y 960-4320-04



NO.	PART NO.	DESCRIPTION	QTY
1	960-4007-05	GUIDE ARM ASSY	1
2	960-4008-05	SIDE FRAME ASSY	1
3	960-4009-06	EJECT P ASSY	1
4	960-4010-05	EJECT LINK ASSY	1
5	960-4057-05	LOADING-P-ASSY	1
6	606-0090-10	PACK GUIDE	1
7	610-0314-03	GUIDE-A-ROLLER	1
8	630-2340-01	SWING ARM	1
9	631-0599-04	PACK STOPPER	1
10	746-0816-01	PACK SET WASHER	1
11	750-2716-01	SWING-A-SPRING	1
12	750-2719-01	GUIDE-A-SPRING	1
13	750-2791-01	LOAD-P-SPRING	1

◎BOTTOM SUB ASS'Y 960-4321-04



NO.	PART NO.	DESCRIPTION	QTY
1	960-4096-04	BOTTOM-P-ASSY	1
2	960-4015-05	REEL BASE ASSY	1
3	013-3863-00	SWITCH	2
4	013-3863-01	SWITCH	1
5	013-3937-00	SWITCH	1
6	051-1114-00	IC *NJL5161K	2
7	099-9394-01	PWB	1
8	111-1021-91	FILM-R *1/4W 1kΩ	2
9	631-0601-02	SLIDE BUSH	1
10	716-0834-00	SCREW	3
11	746-0761-00	WASHER	1
12	750-2720-00	SLIDE SPRING	1